EOSDIS IV&V
Monthly Status Report

For the Period 7/1/96 to 7/31/96

(Deliverable 0201C.1)

August 15, 1996

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1. PROGRAMMATIC INFORMATION

1.1 IV&V Project Organization Chart

Exhibit 1-1 illustrates the current organizational structure of the EOSDIS IV&V team. The approximate number of personnel assigned to each technical task is also indicated.

1.2 Overview of Work Being Performed

a) Key Recent Accomplishments

- **Programmatic**

  ◊ Developed conceptual framework for proposed super task structure to be set in place by next Government Fiscal Year.

  ◊ Instituted proactive measures to resolve and close Technical Issue Memoranda (TIMs) through the weekly status monitoring of Task Lead activities.

  ◊ Supported the development of program tracking metrics in graphic form for the activities monitored/performed by Tasks 4, 5, 6, and 9.

  ◊ Participated in preliminary meetings with IV&V COTR to assess the feasibility of adding an EOSDIS security subtask to the contract.

- **Technical**

  ◊ Under Task 4, delivered the ISE Maintenance and Operations Status Report. Also, released initial Project Issue Tracking System (PITS) WWW Browser query capability allowing users to select issues based upon metadata criteria.

  ◊ Under Task 5, delivered TAM on SCDO Requirements Functionality Shift and Traceability Issue Closure Report, and continued work on ECS Modeling Plan Assessment TAM.

  ◊ Under Task 6, delivered three TAMs addressing the following areas: Design analysis of Science Data Server and Document Data Server CSCIs; assessment of ECS Release A requirements mapped to test cases; and review of the updated ECS Software Development Plan.

  ◊ Under Task 7, submitted TAM discussing suggested metrics for follow-up to the ICE study. Also, continued developing CCM Hardware Model and User Model Prototype.

Exhibit 1-1: Org Chart (Landscape)

◊ Under Task 9, completed reviews and prepared CCR Impact Statements for 25 documents. Also, input revised issue status information as well as new issues into PITS ICWG repository.

◊ Under Task 11, presented briefing to the TICTOC describing the EGS I&T program as changed by the test streamlining effort. Also, prepared Level 4 schedules for the EGS I&T program and delivered first draft to NASA.

Additional status information on each of the technical tasks can be found in Appendix A.

b) New/Proposed Task Assignments

• We recommend including an EOSDIS Security Assessment activity under the current contract. This recommendation will leverage Intermetrics' expertise in the security arena and ensure the implementation of effective security protocols.

1.3 Overview of Schedule Status

Exhibit 1-2 presents the latest, high level milestone chart (i.e., dated August 12, 1996) for all technical tasks assigned on the EOSDIS IV&V contract. In addition, Exhibit 1-3 lists in chronological order the deliverables/milestones associated with the contract for both the current month and the next month, as well as the status of each deliverable/milestone.

1.4 Performance Assurance Activities

• Six personnel attended 8 classes at the Goddard Learning Center in July. Courses taken at the Center range from UNIX training to Network training to Windows '95 training.

• Twelve personnel from Task 11 were trained at the Hughes facility in the use of Load Runner and X-Runner on 7/8 - 7/11.

• Two personnel received Tivoli training on 7/8 - 7/12 and 7/29 - 7/31. Tivoli is the tool that will be used by Hughes to smoothly transition from Release A to Release B. Tivoli will be introduced into the ECS in Release A.1.

• The IV&V Systems Administrator received formal Novell System Administrator training in July. This training will be instrumental in the upcoming Novell System upgrade planned for the middle of August.

• Five personnel are signed up to attend a TDRSS Orientation Class at the Networks Technical Training Facility on 9/17/96. Two personnel are also scheduled to attend courses on TDRSS Real Time Operations and TDRSS Scheduling on 9/18/96.

Exhibit 1-2: Milestone Chart (Landscape)

Expected Date Due	Dependency	Milestone/ Deliverable	Task #	Status*	Comments
7/5/96		**ISE M&O Status Report**	**4**	**C**	**Submitted on time.**
7/31/96		**Task 6C Monthly Metric Report**	**6**	**C**	**Submitted on time.**
7/31/96		CCM Development Model	7	D	Complete source documentation not available yet. Schedule being revised.
7/31/96		**EOSDIS ICD Issue Reports**	**9**	**C**	**Submitted ahead of schedule on 7/9/96 to the ICWG. Interim version with updated metrics also submitted on 7/30/96.**
8/9/96		ISE Infrastructure Metrics Report for July	4	IP	
8/9/96		Revised Rqmts Baseline Assessment TAMs (Initial Assessment)	5	IP	First draft completed in July.
8/15/96		EGS I&T Program Plan (Baseline)	11	IP	
8/30/96		Task 6C Monthly Metric Report	6	O	
8/30/96		EOSDIS ICD Issue Reports	9	O	

* C = Completed, IP = In Process, O = Open, D = Delayed, CX = Canceled

EXHIBIT 1-3: Status of Milestones/Deliverables

Appendix B contains additional statistics on the IV&V team's training progress during the period 5/96 through 7/96.

1.5   Major Short Term Activities Planned

- **Program-wide Activities**

  ◊ Provide specific inputs to proposed Super Task SOWs.

  ◊ Finalize scope of and approach to EOSDIS Security subtask activity.

  ◊ Participate in round table discussion with ESDIS management to discuss the findings of the IV&V team's Process Improvement Review (PIR).

  ◊ Attend Release A I&T ETR/TRR, scheduled for 8/5 - 8/6.

  ◊ Prepare for next Findings Meeting with ESDIS Management, currently scheduled for 9/24/96.

- **Task-specific Activities**

  ◊ For Task 4, deliver the ISE Infrastructure Metrics Report, and initiate prototyping activities for the TMDB WWW Browser.

  ◊ For Task 5, deliver TAMs on ECS CCR Requirements Baseline Corrections and ECS Modeling Plan Assessment.

  ◊ For Task 6, begin traceability analysis of Release A Level 4 and RBR requirements to test cases. Also, review updated Release B SDPS Database Design and Schema Specification.

  ◊ For Task 7, present summary of ICE methods and findings to the EOSDIS Modeling Workshop, complete porting CCM Prototype to the Windows NT environment, and complete initial version of CCM Hardware Model.

  ◊ For Task 9, complete ECS-SCF ICD TAM and support ongoing review of CCRs for the ICWG. Also, support Security Tiger Team and other interface analyses as assigned.

  ◊ For Task 11, deliver baseline Program Plan, and present Test Plans/Procedures for general review.

2. FINANCIAL/CONTRACTUAL INFORMATION

This Section

Has Been Removed

Due to Proprietary Content.

APPENDIX A

TECHNICAL TASK STATUS INFORMATION

Task # 4: IV&V Infrastructure and Tool Development

a) **Task Accomplishments**

- Delivered the ISE Maintenance and Operations Status Report on 7/5/96.

- Installed RTM Version 3.4, based on Hughes plan to transition from Version 2.3 by January 1997. Converted the 6/14/96 ECS RTM baseline into RTM Version 3.4. Both RTM Version 2.3 and 3.4 are now operational. Also started modifying the Automated Requirements Database (ARDB) and RTM Difference Utility (RDU) client/server applications to support the RTM/Oracle database schema changes associated with RTM Version 3.4.

- Released a new client/server version of the Project Issue Tracking System (PITS). PITS version 2.7 highlights include:

    ◊ The addition of the chronology column to the Query Results screen indicating the latest chronology entry.
    ◊ The addition of "Withdrawn" and "Re-Opened" states for the Status combo box and associated processing.
    ◊ Revisions to ICWG summary reporting functionality.
    ◊ The ability to save queries to file or to the database, and the ability to recall saved queries.

- Released an initial PITS World Wide Web (WWW) Browser query capability on 7/31/96. The initial query capability allows the user to select issues based upon specified metadata value criteria.

- Supported the definition of EOSDIS Ground System (EGS) Integration & Test (I&T) metrics. Support addressed Test Management Database (TMDB) metrics and other associated test metrics.

b) **Issues/Concerns**

- None.

c) **Subcontractor Performance**

- EWA performance has been very good, despite some staff transitioning problems. Specific activities included maintenance of the EOSDIS IV&V and EGS I&T Homepages, data entry and conversion activities associated with the ISE, and continued development of the PITS WWW Browser.

d) Planned Activities

- Deliver the ISE Infrastructure Metrics Report, including metrics gathered for the month of July.

- Design and initiate prototyping activities for the TMDB WWW Browser. The TMDB and TMDB WWW Browser will accommodate "I&T electronic file cabinet" information.

- Upgrade BONeS to Version 3.x.

- Perform data entry in order to maintain currency of information on the EOSDIS IV&V and EGS I&T Homepages.

- Continue support (refinement, development, and maintenance) for the ARDB, PITS, and TMDB client/server tools.

- Support program meetings and briefings as required.

Task # 5: Requirements Analysis and Traceability

a) Task Accomplishments

- Delivered TAM on SCDO Requirements Functionality Shift and Traceability Issue Closure Report on 7/29/96. This was an additional effort not in original task SOW.

- Completed first draft of SCDO Release A and B Requirements Traceability Assessment TAM, due on 8/9/96.

- Continued work on ECS Modeling Plan Assessment TAM (ad hoc report).

- With Task 4, provided ESDIS QA and CSC RTM support.

- Met with ESDIS QA Manager at his suggestion to coordinate activities; provided information for ESDIS TRR meeting.

- Delivered detailed charts to Hughes in order to support HITS baseline corrections/analysis.

b) Issues/Concerns

- We need additional information from Hughes to perform a comprehensive modeling assessment. Chris Daly is addressing this issue and providing some of the required information.

- The reorganization of IV&V into a "Super Task" structure may impact the level of support currently being provided to and expected by the NASA Requirements Manager.

c) Subcontractor Performance

- Subcontractor performance has been very good.

d) Planned Activities

- Deliver TAM on ECS CCR Requirements Baseline Corrections.

- Deliver TAM on ECS Modeling Plan Assessment.

- Support program meetings and briefings as required.

Task # 6: ECS Development Analysis

a) Task Accomplishments

- Completed design analysis of Science Data Server and Document Data Server CSCIs based on Release B Delta CDR. Documented findings in a TAM and submitted to ESDIS on 7/8/96.

- Conducted an initial assessment of ECS Release A requirements mapped to test cases based on updated test procedures documentation. Documented findings in a TAM and submitted to ESDIS on 7/18/96.

- Conducted a preliminary assessment of the ECS Release A design of the TSDIS interface. Submitted comments to ESDIS on 7/25/96.

- Reviewed the updated ECS Software Development Plan. Documented findings in a TAM and submitted to ESDIS on 7/31/96.

- Prepared July Monthly Metrics Report showing updated Release A/B StP design repository metrics as well as Release A/B code and unit test and I&T schedule metrics. Submitted report to ESDIS on 7/31/96.

- Briefed Release A/B design, development, and programmatic issues at IV&V Findings Meeting held on 7/1/96 - 7/2/96.

b) Issues/Concerns

- We have limited resources available to effectively respond to additional ad hoc task requests (e.g., external interface analysis, IATO test witnessing, etc.). To address this issue, we have been working with the IV&V COTR to reprioritize activities. In the future, however, we believe that a more formal mechanism is needed to address these ad hoc requests.

c) Subcontractor Performance

- Subcontractor performance has been good.

d) Planned Activities

- Begin traceability analysis of Release A Level 4 and RBR requirements to test cases based on the data provided in the 7/31/96 version of RTM.

- Attend Release A I&T ETR/TRR on 8/5 - 8/6. Provide preliminary comments on test procedures prior to ETR/TRR. Provide additional comments by 8/30/96.

- Support review of Release A IATO test procedures.

- Review updated Release B SDPS Database Design and Schema Specification and submit comments to ESDIS on 8/26/96.

- Generate updated metrics for month of August; document and submit results in August Monthly Metrics Report.

- Support program meetings and briefings as required.

Task # 7: Programmatic and Process Analysis

a) Task Accomplishments

- Submitted TAM on 7/17/96 discussing suggested metrics for follow-up to the ICE study.

- Continued refining CCM data structures. Consolidated databases to improve overall model efficiency.

- Continued rehost effort to port CCM Prototype from Sun to Windows NT environment.

- Developing a User Model Prototype which will be used to further define the development process for the other models. The User Model has been chosen as a

prototype because more information is available to develop a preliminary implementation of it than of the other models.

- Working on model output profiles for both the User and Hardware Models. Fine-tuning these outputs to conform to Dr. Barkstrom's requirements.

b) Issues/Concerns

- The deliverable schedule for the CCM development effort continues to slip to the right. Current plans are for Dr. Barkstrom to work beyond the end of September and for Intermetrics to complete the model software by the end of the year. This plan seems to have met with broad community support, since the community would like the CCM designed and implemented correctly rather than rushed. Dr. Barkstrom also provided a status of the CCM effort to the Science Executive Committee of the EOS Investigators Working Group on 7/29/96.

c) Subcontractor Performance

- Not Applicable.

d) Planned Activities

- Present summary of ICE methods and findings to the EOSDIS Modeling Workshop, scheduled for 8/8/96.

- Complete porting CCM Prototype to the Windows NT environment.

- Complete initial version of CCM Hardware Model by end August / early September.

- Participate in seminar-demo of CCM Hardware Model to be held at both Langley and Goddard in the August/September time frame.

- Participate in next CCM Executive Panel Meeting, scheduled for early September.

- Support other program meetings and briefings as required.

Task # 9: Key Interface Analysis

a) Task Accomplishments

- Completed reviews and prepared CCR Impact Statements for 25 documents including:

    ◊ 12 EBNet ICDs

◊ 5 EDOS IRDs (EGS, EBNet, ETS, EGT, TGT)
◊ EDOS-ASTER ICD
◊ ECS-SDVF ICD
◊ ECS-NOAA ICD
◊ ECS-SCF ICD
◊ JPL-GSFC ICD, Appendix AA
◊ EDOS-EGS ICD
◊ GSFC DAAC-ECS ICD
◊ LaRC DAAC-ECS ICD

- Generated EDOS-EGS ICD TAM.

- Coordinated the review and CCR impact preparation for remaining interface documents in accordance with ICWG schedule.

- Input revised issue status information as well as new issues (provided by book bosses) into PITS ICWG repository. Delivered full issue summary report and metrics on 7/9/96 at ICWG Status Meeting. Also, provided interim version to Candice Carlisle on 7/30/96, with updated metrics.

- Developed table of Task 9 analysis chronology with respect to TRMM/TSDIS, in support of the TSDIS "lessons learned" report.

- At ESDIS' request, attended Tiger Team meeting on Kerberos/security held on 7/31/96. Researched current security specifications related to IRDs/ICDs to prepare for the meeting.

b) Issues/Concerns

- The workload for Task 9 far exceeds available resources. This situation has been further aggravated by recent ad hoc IV&V tasking requests, as well as the departures and absences of assigned personnel. To mitigate this situation, we are sharing resources from other tasks and aggressively working to find necessary personnel replacements.

- Hughes' "delta" design reviews and other similar activities are sometimes not being announced to IV&V. This prevents us from obtaining the most current project information.

c) Subcontractor Performance

- CTA is the task lead for this effort. Their performance has been very good.

d) Planned Activities

- Support ongoing review of CCRs for the ICWG.

- Continue data entry into PITS ICWG repository; present status at next ICWG meeting scheduled for 8/13/96.

- Support Security Tiger Team and other interface analyses as assigned.

- Complete ECS-SCF ICD TAM.

- Generate list of outstanding NOAA ICD issues as requested by NASA. These issues will be tracked by the ICWG.

- Support program meetings and briefings as required.

Task # 11: EOS Ground System Integration and Test

a) Task Accomplishments

- Prepared and presented briefing to the TICTOC describing the EGS I&T program as changed by the test streamlining effort.

- Prepared and presented briefing to Hughes managers on the EGS I&T development process.

- Prepared two new sections to the EGS I&T Program Plan - a metrics section which was well received by the customer, and a test automation section describing test tools and their use in the test program.

- Prepared Level 4 schedules for the EGS I&T program and delivered first draft to NASA.

- Processing comments to EGS I&T Program Plan and editing document.

- Began entering specific test case information into the Test Management Database (TMDB).

- Continued developing test plans/procedures with internal reviews.

b) Issues/Concerns

- One of the Task 11 Team Leads has left the program to pursue other career opportunities. We are temporarily filling this position with a current staff member and are interviewing promising candidates in an effort to select a permanent Task Lead.

c) Subcontractor Performance

- Subcontractor performance has been good.

d) Planned Activities

- Present Test Plans/Procedures for general review.

- Deliver the baseline Program Plan.

- Iterate on the Level 4 test schedules.

- Support program briefings as required.

<u>APPENDIX B</u>

PERFORMANCE ASSURANCE:
TRAINING PROGRESS STATISTICS

**Appendices C and D
have been removed
due to proprietary content.**